

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-19 (Canceled)

20. (Original) A mold assembly useful with a pressure casting apparatus, comprising:

a housing including an interior volume and an opening through a wall of the housing;

a refractory shell mold having an internal mold cavity and an inlet port providing access to the internal mold cavity, said refractory shell mold being disposed within the interior volume of the housing such that the inlet port communicates with the opening; and

a metal alloy substantially filling a volume between an external surface of the refractory shell mold and the housing.

21. (Original) The mold assembly of claim 20, wherein said housing is configured to mate with a die cavity of the pressure casting apparatus, and the inlet port is configured to accept an inlet sprue from the pressure casting apparatus.

22. (Original) The mold assembly of claim 20, wherein said refractory shell mold includes at least one of alumina and zirconia.

23. (Original) The mold assembly of claim 20, wherein said metal alloy has a melting temperature of no greater than about 300°C.

24. (Original) The mold assembly of claim 23, wherein the metal alloy includes at least one of lead, bismuth, and antimony.

25. (Original) The mold assembly of claim 20, wherein the refractory shell mold includes re-entrant features.

26. (Original) A casting system comprising:
a pressure casting apparatus having an inlet sprue and a die cavity; and
a mold assembly configured to fit within the die cavity, said mold assembly including:

a housing including an interior volume and an opening through a wall of the housing;

a refractory shell mold disposed within the interior volume of the housing, the refractory shell mold having an internal mold cavity and an inlet port that communicates with the opening in the housing and mates with the inlet sprue; and

a supporting material substantially filling a volume between an external surface of the refractory shell mold and the housing.

27. (Original) The casting system of claim 26, wherein the housing is formed of steel.

28. (Original) The casting system of claim 26, wherein said housing is dimensioned such that a gap of no more than about 0.3 mm exists between all corresponding surfaces of the housing and the die cavity.

29. (Original) The casting system of claim 26, wherein the supporting material includes a granular material.

30. (Original) The casting system of claim 29, wherein the mold assembly further includes a compaction plate in communication with the housing and the supporting material.

31. (Original) The casting system of claim 29, wherein the granular material includes at least one of carbon particles, alumina-based sand, zirconia-based sand, and metal particles.

32. (Original) The casting system of claim 26, wherein the supporting material includes a low melting point metallic alloy.

33. (Original) The casting system of claim 32, wherein the metallic alloy includes at least one of lead, bismuth, and antimony.

34. (Original) The casting system of claim 26, wherein the refractory shell mold includes re-entrant features.

35-45 (Canceled)